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which is itself a copy, or from the world's standard in Europe, and whether coöperation with other countries is feasible in this work, are important questions for consideration.

Whether the standard secured should be a fraction of the yard or of the metre, and how large a fraction, I, for one, should scarcely have an opinion until the committee should ascertain how generally each system is used by the workers of the country, and how freely those workers would be willing to adopt the new system by general agreement. Whichever system is adopted, many microscopists would be glad to have a convenient unit in the other system, verified by comparison; a standard centimetre divided into one hundred parts, for instance, being accompanied by an inch similarly divided and having, microscopically, the same relation to it that it has mathematically. This method, of possessing a practical standard in each system while technically improper, would be a convenience, and would give a great improvement in our micrometry. Nor would the objection that it might hinder the universal adoption of the scientific (metric) system be a serious difficulty to my mind. The adoption and rejection of systems is a matter of evolution, not artifice, and the world will move at a rate that depends upon its average interests, without being much affected by special efforts to advance or retard its progress.

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### SCIENTIFIC NEWS.

— The President nominated Clarence King for the directorship of the U. S. Geological Survey recently created by act of Congress, and the newspapers state that the Senate has confirmed the appointment. Of Mr. King's merits as a geologist we need not speak, as the Report of the Survey of the Fortieth parallel is an enduring monument to his ability. We shall hope that the fullest measure of success may attend the new Bureau and its distinguished director.

— It is with great regret that we learn that Frank A. Bradley, the well-known geologist, was recently crushed to death by the caving of the wall of a gold mine in Georgia. Mr. Bradley had at different times filled positions on the geological surveys of various States, including New York, Illinois, Tennessee and Georgia. He wrote many reports, and is the author of a geological map of the United States.

— Prof. George B. Wood, president of the American Philosophical Society, and formerly professor of the Institutes of Medicine in the University of Pennsylvania, recently deceased at the age of eighty-two years. He is well known as the author of Wood and Bache's Dispensatory, the standard work on the subject in this country. He left important legacies to the University

of Pennsylvania, including an endowment for several chairs in connection with the medical department ; to the American Philosophical Society, etc.

— Prof. Samuel T. Sadtler has recently been elected to the chair of chemistry in the Department of Arts of the University of Pennsylvania. Prof. Sadtler is a native of Pennsylvania, and is well known as an expert in the analyses of mineral oils, etc.

— The Buenos Ayrean collection of vertebrate fossils, exhibited at the Paris Exposition arrived at Philadelphia by the *Indiana*. It is to be exhibited in the biological department of the Permanent Exposition.

— B. Waterhouse Hawkins has been lecturing on vertebrate palæontology, in London, this winter.

— It appears by a paper communicated to the Geographical Society of Paris, by M. Jules Garnier, that in the island of New Caledonia the usual vegetable productions of the tropics grow well on the island, but excepting coffee and tobacco they were subject to periodical destruction by invasions of grasshoppers.

— We have received the Constitution and Record of Organization of the State Natural History Society of Illinois, with a list of original members, which number fifty-two. This is one of the most active scientific organizations of the West.

— In the Proceedings of the Zoölogical Society of London, lately received Mr. T. J. Parker publishes a note confirmatory of Prof. Moebius' account of the stridulating organs of the spiny lobster (*Palinurus vulgaris*). The noise or stridulation is almost equally audible in water and air. Moebius compared it to the sound produced by pressing the upper leather of a boot against a table leg.

— A valuable paper by Prof. Vogt on the adaptation of Copepodous Crustacea to parasitism, appears in the last received number of Actes de la Société Helvetique des Sciences Naturelles. Bex, 1878. The author believes that evolution should be studied from an examination of parasitic and blind animals, as showing the influence of a change in the environment on the structure of the animal.

— At a recent meeting of the London Entomological Society the Rev. A. Eaton exhibited a piece of "Kungu cake" from Lake Nyassa district, where, according to Livingstone and others, it is used extensively as food by the natives, who manufacture it from large quantities of a minute insect, conjectured to be a species of *Ephemeridæ*. From an exhaustive examination, however, Mr. Eaton found it to be a minute representative of the Culicidæ, or mosquito family, probably belonging to the genus *Corethra*. In connection with the subject of insect-food as used by

man, Mr. Distant remarked that he had learned from Mr. Chennell that *Erthesina fullo*, a very common eastern hemipterous insect was largely eaten by the Naga Hill tribes of North-eastern India. Mr. Meldola remarked that chitine, which comprised the crust of insects had been shown by analysis to contain about six per cent. of nitrogen, and as regards phosphates, Mr. Wm. Cole had burned some insects and found phosphoric acid in the ash.

— A laborious work, redounding to the credit of both parties, is Mr. Samuel Henshaw's list of the entomological writings of John L. LeConte. It forms a pamphlet of eleven pages, edited by George Dimmock, and is No. 1 of Dimmock's Special Bibliographies. Dr. LeConte has thus far published 250 papers and works. We hope to record the publication of many more from his pen. The second number comprises the entomological writings of George H. Horn, compiled by Samuel Henshaw, edited by George Dimmock. The titles number 80. The third part is in preparation, giving a list of the writings of Samuel Hubbard Scudder; compiled and edited by George Dimmock. Mr. Scudder's writings number over 250 titles. These have, or will appear in the Advertiser of *Psyche*, the organ of the Psyche Entomological Club, Cambridge. These bibliographies are done with unexampled faithfulness and care, and can be purchased of the editors of *Psyche*, Cambridge, Mass. This journal desires and needs more subscribers. The subscription is \$1.00 a year. It is doing a good work for the progress of entomology in this country, and contains matter of much general interest; the bibliographical portion being a valuable feature. We would only make one criticism, *i. e.*, in the use of lower case initial letters of names of genera and higher groups; this is an innovation which we should not desire to see followed.

— The fourth volume of the Transactions of the Wisconsin Academy of Sciences, Arts and Letters, just received, among a number of comparatively worthless papers, contains besides Prof. Birge's notes on Cladocera, already noticed in this journal, a paper by Dr. E. Andrews on discoveries illustrating the literature and religion of the Mound-builders. Dr. P. R. Hoy contributes two papers entitled, How did the Aborigines of this country fabricate copper implements? and Why are there no upper incisors in the Ruminantia? Dr. J. N. de Hart writes on the antiquities and platycnemism of the Mound-builders of Wisconsin, while Prof. T. C. Chamberlain publishes an essay on the extent and significance of the Wisconsin kettle moraine.

— At its last session Congress appropriated \$10,000 for the completion of the investigation of the Rocky Mountain locust by the United States Entomological Commission. The work during the coming season will be carried on in Colorado and the Western Territories, particularly Utah and Eastern Idaho, where the locust abounds each summer, doing more or less damage.

Parties will also be sent into Montana, the main breeding place of the destructive swarms periodically visiting the Western Mississippi States.

— The cryptogamous division of the Herbarium of the Boston Society of Natural History has been enriched by the discovery of a valuable collection of lichens. This was formerly the lichen-herbarium of Dr. Thomas Taylor, an Irish botanist, to whom Sir W. J. and Sir Joseph Hooker communicated the whole of their extensive collections of lichens, gathered during many exploring expeditions. Dr. Taylor published descriptions of these plants in the London *Journal of Botany*, 1844-46, and many of the specimens are the originals of the descriptions. In 1850, Mr. John A. Lowell purchased the collection from Dr. Taylor's heirs, and it formed a part of the herbarium subsequently presented by him to the Society. The knowledge of the structure of lichens has been greatly advanced since Dr. Taylor's day, by the use of the microscope, and the nomenclature has undergone extensive changes. This herbarium, though consisting of over a thousand species, might have remained comparatively useless to the American student, had it not been for the voluntary services of Prof. Edward T. Tuckerman. He has examined and named very nearly the entire collection, a work which no one else in this country could have done, and has given it an authentic value otherwise unattainable.

— The French Academy of Science has elected M. Marey, Professor of Animal Mechanics in the College de France, to M. Claude Bernard's vacant chair.

— In a recent report to Parliament, it seems that last year 21,682 fatal cases from the attacks of wild animals had occurred in ten provinces of India, the largest number being in Bengal, namely, 10,062. The deaths from snake bites alone in the Punjab last year, were 828 against 979 in the preceding year.

— As our readers are aware, the three great geological surveys under Hayden, Powell and Lt. Wheeler are, by Act of Congress, to be discontinued after the 30th of June, and to be replaced by a new U. S. Geological Survey in charge of Mr. Clarence King, late geologist of the Survey of the Fortieth Parallel. It was as far as we are aware the original understanding when the matter was referred by Congress to the National Academy of Sciences to simply consolidate the existing geological surveys, but the report of the Committee was so worded that these surveys were abolished outright instead of being consolidated. The amount appropriated for the new geological survey is \$100,000, a little more than each of the other surveys have formerly received. Thus the work is apparently to be greatly curtailed, and science and the best interests of the western people will, in a corresponding degree, suffer.

It is greatly to be regretted that the work is in the future apparently to be conducted on so narrow and limited a scale, for which the scientific world may thank the two or three naturalists who have been conspicuous in shaping legislation in this whole matter. It has even been strongly intimated that hereafter no zoölogy and botany is to be connected with the future geological work. This is to be deprecated by biologists throughout the country, who are probably unaware how much has been done to influence those in authority at Washington, and to prejudice them against giving national aid to these sciences. All this is a new feature in the history of science in this country, and has been, we are led to believe, the result of narrow, local private jealousies, rather than from any generous, catholic, scientific spirit. Since the time of Lewis and Clark's Expedition, naturalists have been sent out with the national scientific expeditions, at little expense to the general government; with nearly all surveying parties, topographical and geological; the reports of the naturalists of the U. S. Exploring Expedition, of the Pacific Railway Surveys, of the naturalists who have prepared the botanical and zoölogical reports of Hayden's Survey, have added immensely to the prestige of American biological science; it has been done at little extra expense, most of the cost of printing not having been paid for out of the funds appropriated for the surveys themselves. No richer results in biology and palæontology and physical geology combined have been elicited in this country than the researches carried on by Pourtales, the two Agassizs and those associated with these scientists, in the dredgings made in deep water from Florida to Maine on the vessels of the U. S. Coast Survey; and yet it has been urged on legislators and those in authority at Washington, with singular inconsistency, by certain of those who have and are even now enjoying the results of the biological work thus inexpensively carried on with the U. S. Coast Survey, that no zoölogy or botany should be connected with the geological surveys!

From the very fact that the largest, best known survey in this country and in Europe, one which more than any other survey in this country, unless we except the New York State Survey, has won the warmest sympathy and interest from the leading geologists and palæontologists of Europe—from the very fact, we say, that the survey in charge of Professor Hayden has been conducted in a liberal, catholic way, and so as to promote and diffuse among the people who are paying for the work done, a knowledge of the natural resources of the Far West, we had hoped that after more than twenty years of service in the field, he would have been allowed to extend and complete the work in the manner already begun. We would see no curtailment of the work, and in voting in the meeting of the National Academy for consolidation, we supposed that with the moral support of the Academy, Congress would vote still larger supplies, and have the work done in a liberal, broad, comprehensive spirit consistent with

the magnitude of the interests involved, and especially that no grave injustice would be done in selecting those who should have charge of the work. There was room for the employment of all who were engaged in the work now going on, and we firmly believe that had Prof. Henry, the lamented promoter of American science in its broadest spirit, presided over the councils of the National Academy, the result would have been far different.

Mr. King has our congratulations and best wishes, and we trust he will liberally construe the recent Act of Congress, and conduct the surveys to be under his charge in the liberal spirit already shown in the series of elaborate reports of the Fortieth Parallel, one of the most expensive of which treats of the botany of the Survey.—*A. S. Packard, Jr.*

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## PROCEEDINGS OF SCIENTIFIC SOCIETIES.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Jan. 22.—President Ruschenberger in the Chair. Mr. Meehan called attention to some specimens of *Solidago odora*, which was used in some parts of Pennsylvania as tea. Mr. Ashburner exhibited some charts intended to illustrate the geological faults in Jack's mountain, Pa. Mr. Potts exhibited some silk-worm cocoons in which the skin cast off from the trachea within was shown, and also that two worms spun a single cocoon in co-partnership. Mr. John Ford exhibited an oyster, the shell of which was almost destroyed by the common boring sponge.

Jan. 28.—The President in the Chair. A paper entitled, Further Notes on the Mechanical Genesis of Tooth-forms, by John A. Ryder. Dr. Leidy exhibited a mass of worms from Cecil county, Md., supposed to be *Gordius robustus*, also the liver of a rat much infested with *Cysticercus*.

Feb. 4.—The President in the Chair. Dr. Leidy described the fossil jaws and teeth of a deer from Muscatine, Iowa, for which he proposed the name *Cervus muscatinensis*. Dr. H. C. Chapman made a communication on the chimpanzee which recently died at the Zoölogical Garden, arriving at the conclusion, and agreeing with Prof. Owen, that the cerebrum did not fully cover the cerebellum, as held by Huxley and others. Detailed comparisons were also made in regard to the arrangement of the muscles.

MIDDLESEX SCIENTIFIC FIELD CLUB, Malden, Mass., organized March, 1878.—The Club held its first annual meeting March 5, 1879, and elected the following officers: President, Henry L. Moody; vice-presidents, Rev. Geo. P. Huntington, Frank S. Collins, Mrs. P. D. Richards; corresponding secretary, Geo. E. Davenport; recording secretary and treasurer, F. W. Morandi; custodian, Miss Hattie Silvester; Exec. Com., L. L. Dame, Geo. E. Davenport, Mrs. Annie U. Moody, Miss Martha Silvester, F. W. Morandi.